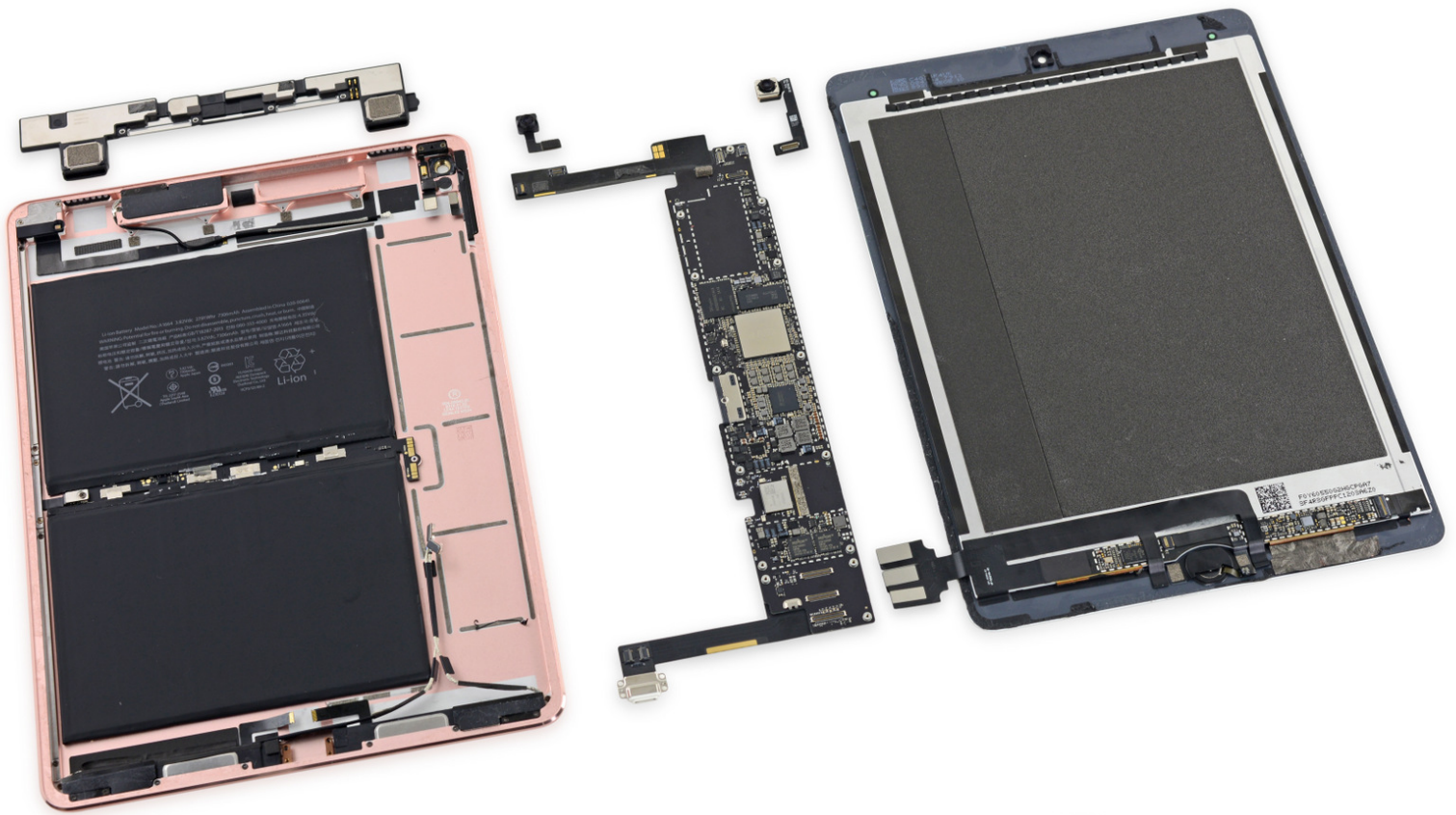




iPad Pro 9.7" Teardown

iPad Pro 9.7" teardown on April 4, 2016.

Written By: Geoff Wacker



INTRODUCTION

You probably expected a thinner, lighter, and faster iPad Air 3, but Apple had other ideas. Instead of iterating on October 2014's [iPad Air 2](#), they went back to the drawing board. Actually they probably don't use a drawing board, they use an iPad Pro—which might be where they got the idea for this. It seems to pack [all the features of the first iPad Pro](#), in a smaller package. Let's see how they did it—it's time to tear down the iPad Pro 9.7".

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[video: <https://www.youtube.com/watch?v=1Qqtn1G6jhl>]



TOOLS:

- [iOpener](#) (1)
 - [Suction Handle](#) (1)
 - [iFixit Opening Picks set of 6](#) (1)
 - [iFixit Opening Tools](#) (1)
 - [Tweezers](#) (1)
 - [Phillips #00 Screwdriver](#) (1)
 - [Spudger](#) (1)
-

Step 1 — iPad Pro 9.7" Teardown



- Apple may have let all the Air out of the iPad line, but they didn't skimp on the 9.7" Pro's specs:
 - Fully laminated, 9.7", LED-backlit, Oxide TFT "True Tone" display with 2048 x 1536 resolution (264 ppi)
 - 3rd generation 64-bit Apple A9X custom processor, with M9 motion coprocessor
 - 12 MP rear iSight camera with 4K video recording at 30 fps, and 5 MP FaceTime camera with 720p video
 - Self-balancing, four-speaker audio
 - Touch ID sensor, 2 microphones, 2 ambient light sensors, accelerometer, barometer, *and* 3-axis gyro
 - 802.11a/b/g/n/ac MIMO Wi-Fi + Bluetooth 4.2
 - 32, 128, or 256 GB of on-board storage

Step 2



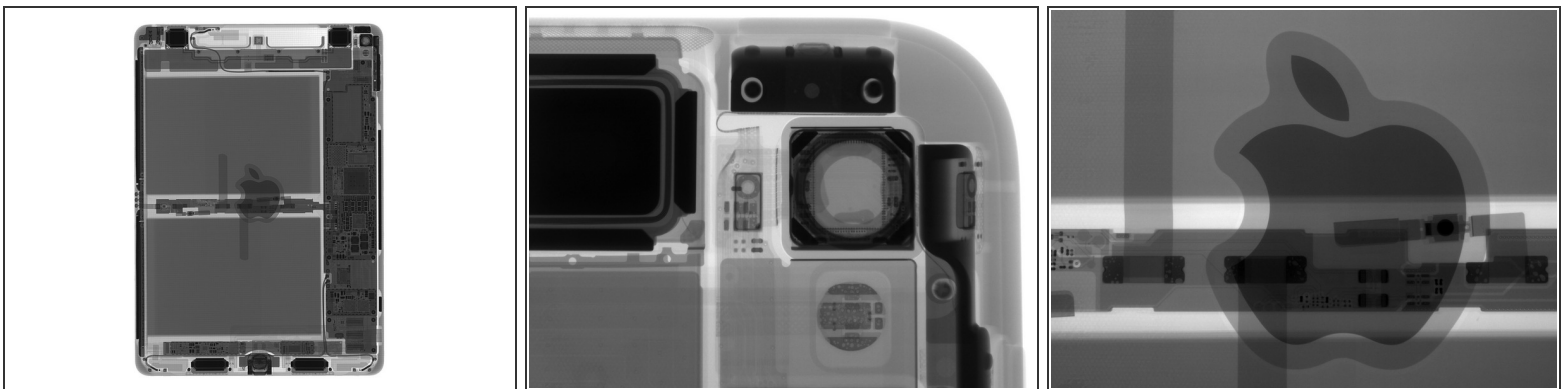
- Before sinking our ~~teeth~~ picks into this thing, we check out our favorite website to get a look at the [True Tone](#) display.
- Of course, what sleek, new mobile offering out of Cupertino would be complete without the infamous camera bump?
 - ⓘ This 1.1-millimeter mesa was [absent](#) from the 12.9" model, but probably necessary in this iteration due to the slightly shallower rear case and spec'd up 12 MP, 4K rear camera.
- And, for the second time this week, the Rose Gold rear case shows off a new model number: A1673, and the usual regulatory markings.
- No surprise, once it reaches its [5th birthday](#), Apple doesn't want you pitching your iPad into the nearest trash can—they'd prefer you [give it back](#).

Step 3



- The whole iPad family is here! Left to right: Mini 3, Air 2, and iPad Pro 12.9".
- Truly, in its entire history, there has never been a more Rose Gold iPad than this.
- In all seriousness, it's refreshing to see a redesign that seems to focus on features rather than a high-pointless reduction in thickness, in a device that's already thinner than a pencil.

Step 4



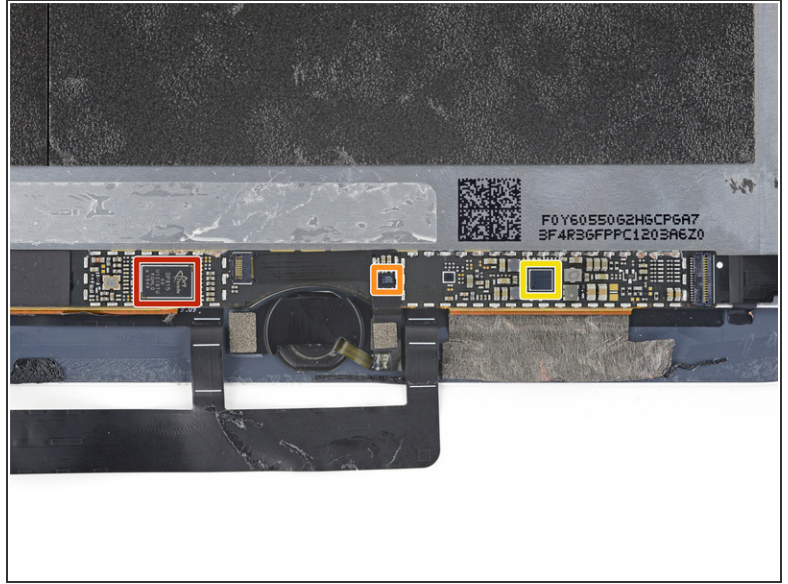
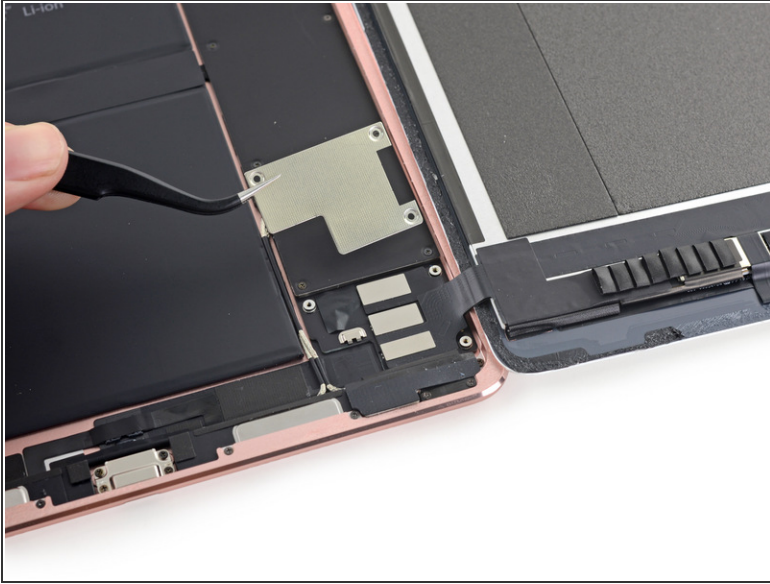
- Our ingenious friends at [Creative Electron](#) sent us a sneak peek at the Pro 9.7's internals, X-ray style.
- We immediately note that where the larger iPad Pro's interior volume was [dominated by four huge speaker enclosures](#), this little guy uses a more conventional setup: the battery hogs most of the space, with the logic board on the side and the speakers squeezed in at the margins.
- What's that weird strip of PCB running through the middle, though?
- Time for a closer look. Let's open it up!

Step 5



- As we heat up the iOpeners, we place bets in the office pool: Where will the display cables be this time?
- Time to pick softly and hope we don't snag anything.
 - ❗ One day, perhaps, Apple will put its massive engineering prowess to work on the problem of how to make a tablet that opens for servicing—*without* the nail-biting 30-minute process of heating, blind prying, and suctioning it currently demands. But it is not this day.
- Having successfully carved the front panel free from its gluey frame, we get our first peek inside...

Step 6



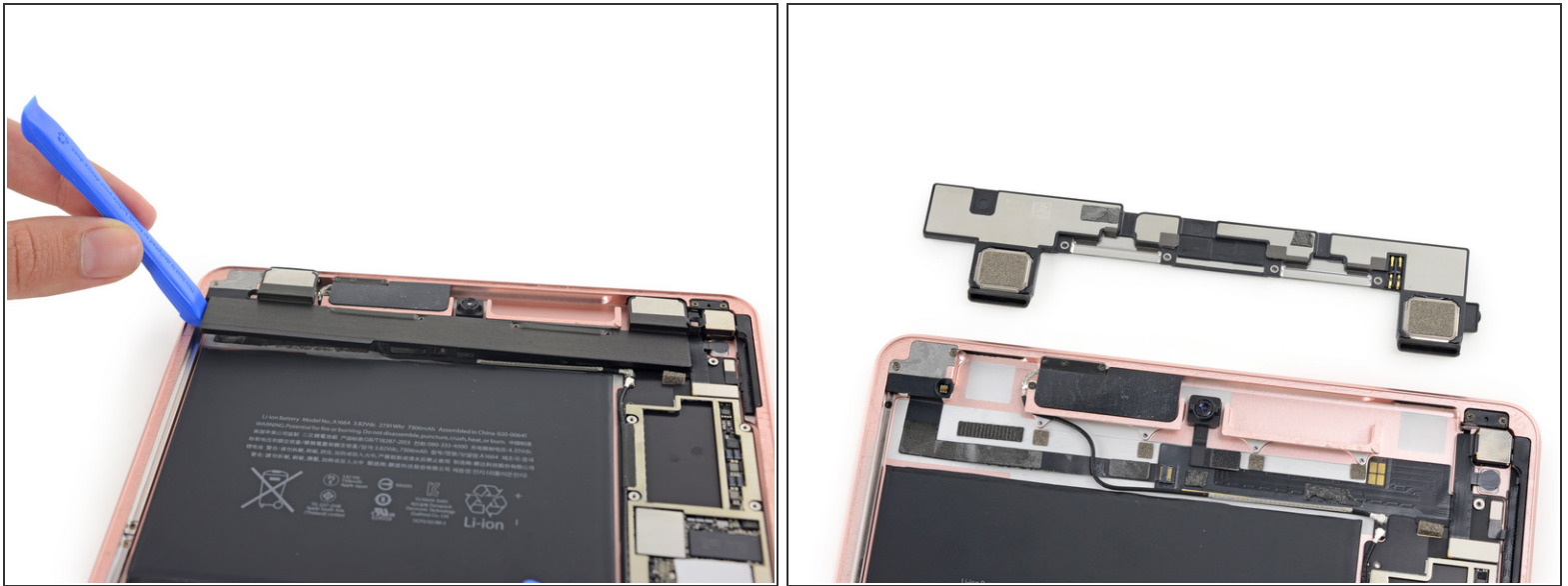
- Survey says: Display cable's in the bottom right corner! That's a new configuration.
- We'd like to take a brief moment to mention that disassembly instructions are hugely important for successful repairs. We believe every user has the right to know how to safely work on their device.
- The display, backed with some cushioning foam, also contains a ton of chips!
 - Parade Technologies DP815 (likely an iteration of the DP695 timing controller found in the [12.9" Pro](#))
 - NXP Semiconductors [8416A1](#) Touch ID Sensor
 - 98667A B5528T

Step 7



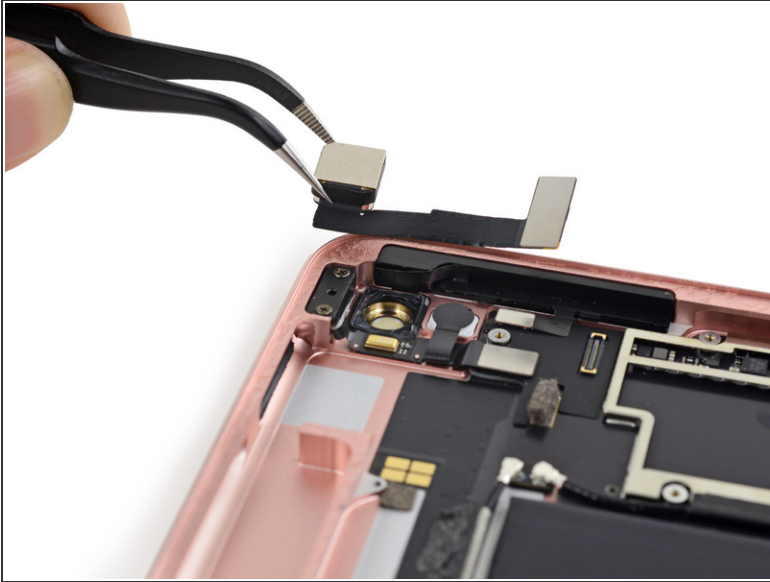
- After popping a few screws, we remove a big slab of EMI shield covering the logic board.
 - ❗ We saw this same kind of shielding in the larger [iPad Pro](#), but it didn't exist in the iPad Air line.
- Our fingers are itching for chips, but for now we restrain ourselves and settle for isolating the battery. One precisely-placed [pick](#) separates the battery contacts from the logic board.
- Next to come off is another shield covering the battery board, nestled between the two large battery cells.
 - ★ There's some action in there, and bizarrely, a screw that seems to be holding the smart keyboard connector to the battery board.

Step 8



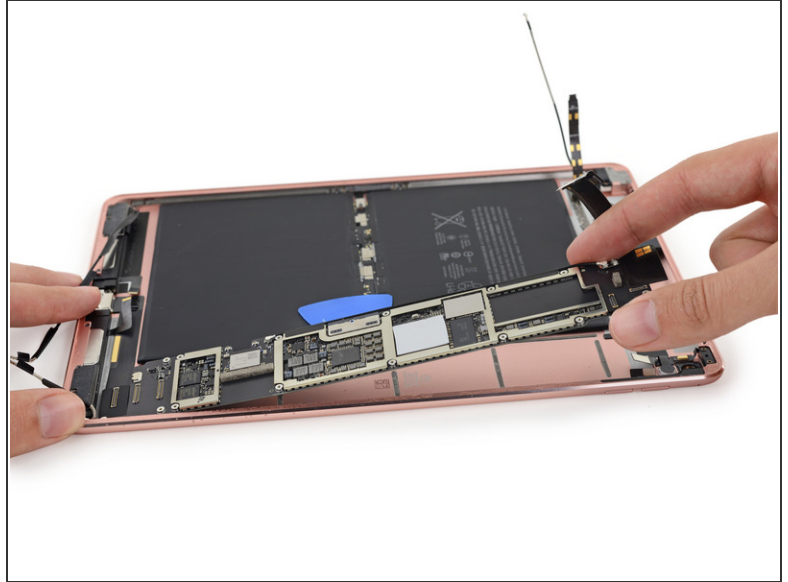
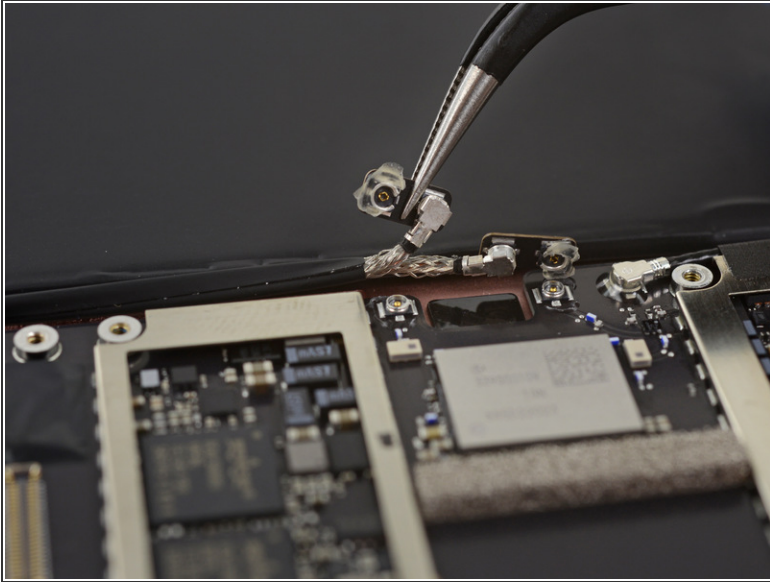
- With shields and tape deftly dispatched, we turn our attention to the heavy hitters. First up: upper speakers!
- They're really fiercely glued in, and screwed in, but it's nothing a plastic opening tool can't deal with.
- Once we pop the speakers out for a closer look, we're rewarded for our hard work: they connect to the logic board with spring contacts!

Step 9



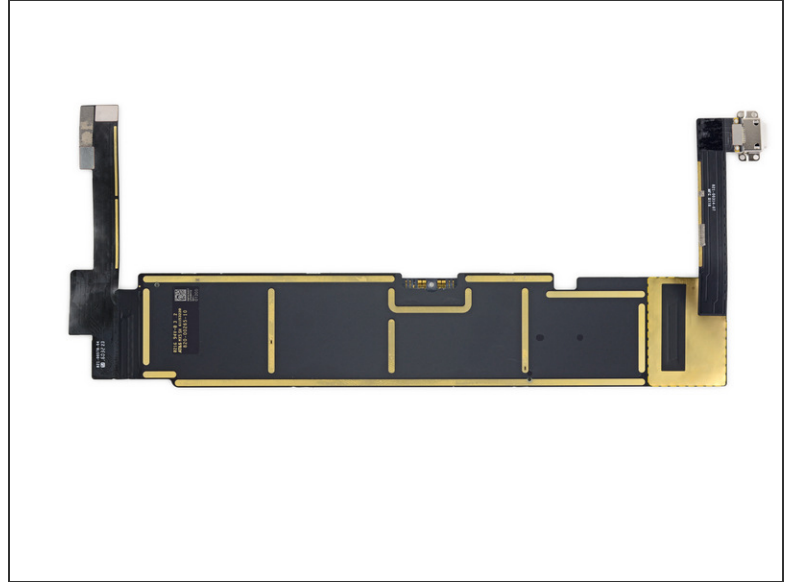
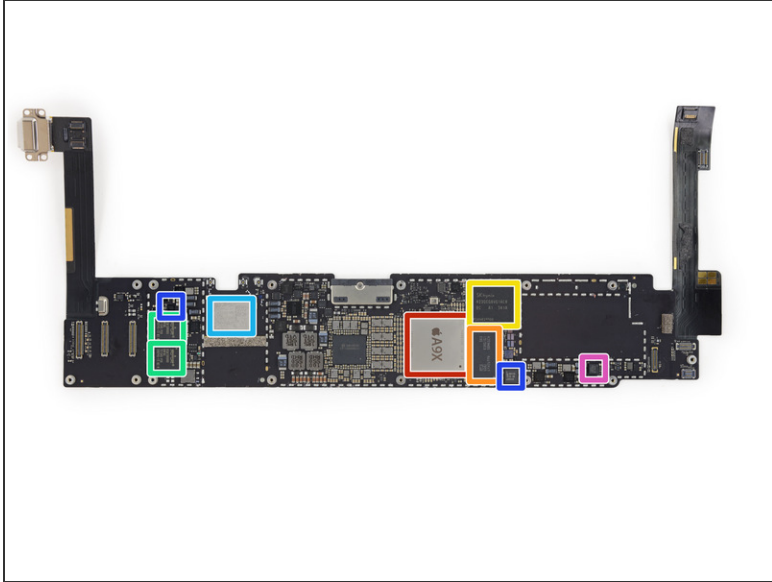
- Out pops the perpetrator of that unsightly camera bump.
 - And yup, that dimple goes all the way down, through the case down to the sapphire crystal lens cover.
- Recently, there have been a number of consolidated hardware features in Apple's mobile lineup and this camera is no exception.
 - It's the same 12 MP, 4K shooter featured in the [6s](#)—a substantial upgrade over the 8 MP 1080p camera we dug up in our last [Pro](#) teardown.
- ❗ We assume this will lead to [nothing good](#).

Step 10



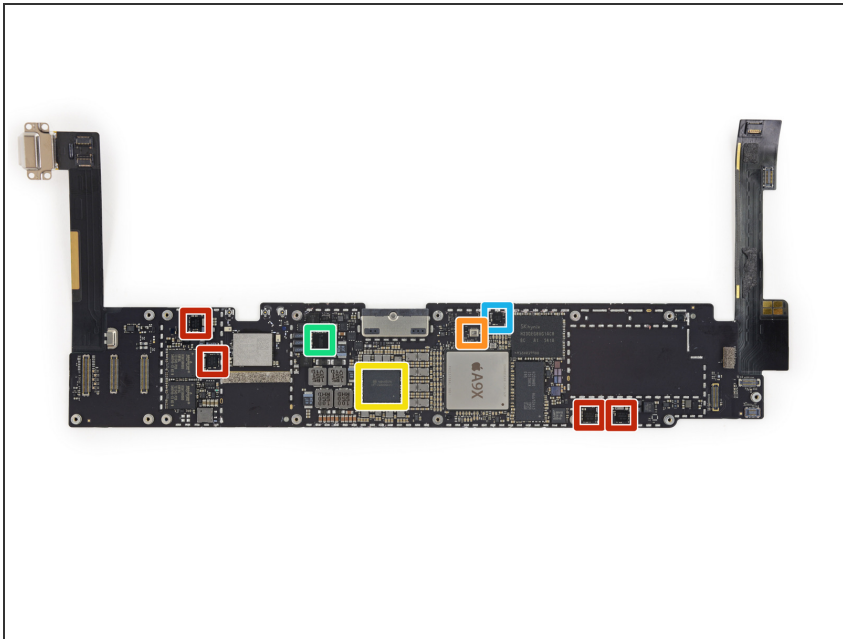
- On our way to the logic board, we encounter some strange new antenna interconnect boards.
- A dab of glue fastens each connector in place, but they come free with a little gentle prying.
- The boards themselves serve no obvious purpose; we can only speculate that their flat tops provide a little extra support for the display.
- ⓘ Now that you'll be resting your palms on the glass while drawing with your [Pencil](#), maybe a little reinforcement is called for.
- Anyway, time to get a look at that logic board!

Step 11



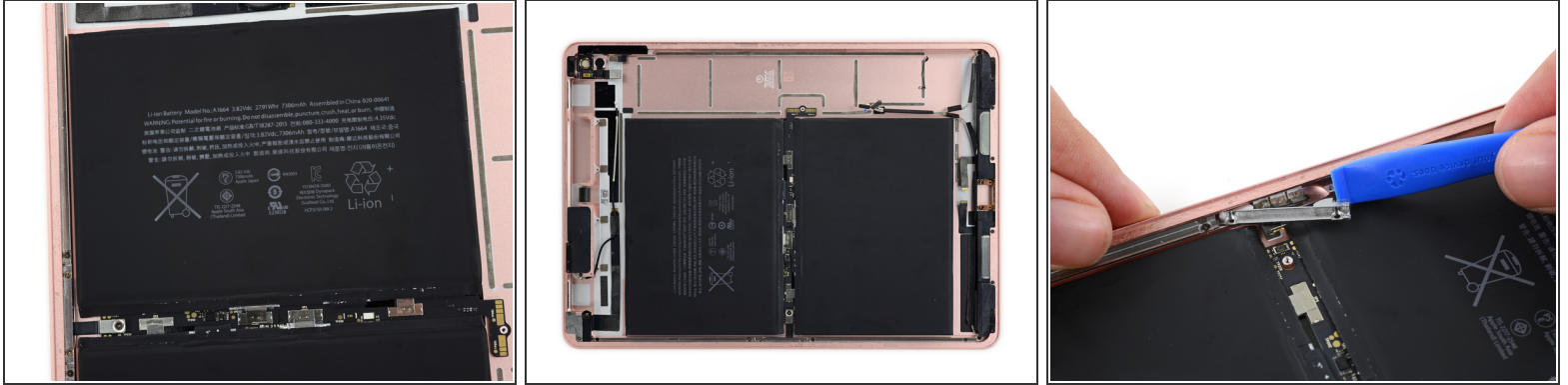
- Chip chip hooray!
 - Apple [APL1021](#) A9X 64-bit Processor
 - Samsung K3RG1G1 2 GB (16 Gb) LPDDR4 RAM
 - SK Hynix [H23QEG8VG1ACA](#) 32 GB (256 Gb) NAND Flash Memory
 - 2 × Broadcom BCM15900B0 (as seen in the iPad Pro 12.9")
 - Apple 339S00109 Wi-Fi Module
 - NXP [66V10](#) NFC Controller and 1610A3 Charging IC (as seen in iPhone SE/6s/6s Plus)
 - InvenSense [EMS-A](#) 6-axis Gyroscope and Accelerometer Combo (also found in [iPhone SE](#))

Step 12



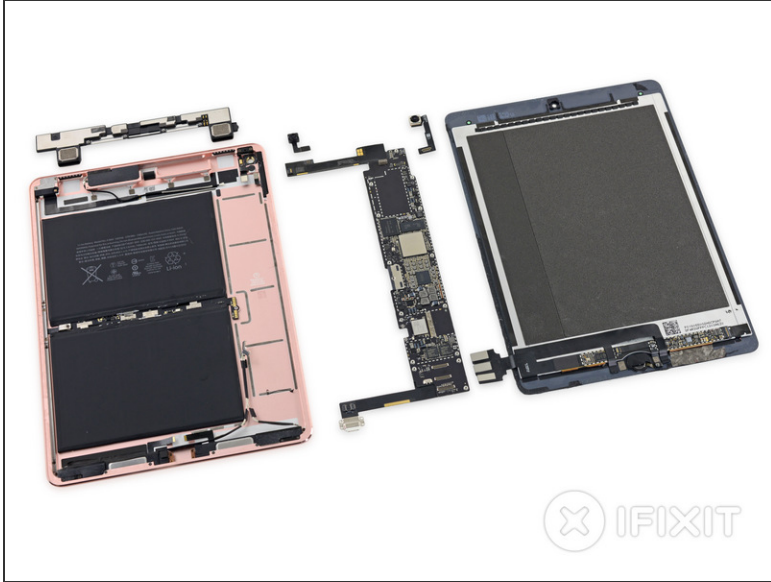
- But wait, there's even more chips!
 - Maxim Integrated [MAX98721BEWV](#) Boosted Class Amplifier
 - M7H YP (likely a Bosch Sensortec [BMP280](#))
 - 343S00051-A1 (likely an iteration of the 343S00052-A1 found in the [iPad Pro 12.9](#))
 - 343S00089-A1
 - L05286 VZB VG Z SGP 547

Step 13



- Unfortunately for repair-minded folks like ourselves, the battery contains none of those nifty [adhesive pull tabs](#) found in the larger iPad Pro (and in every iPhone since the 5s). So, removing it is a sticky affair.
 - Maybe next time Apple? Pretty please?
- What the battery does contain is a rating of 3.82 V, 27.91 Wh, and 7,306 mAh, amounting to a 10-hour battery life claim.
 - ❗ As expected, that's quite a bit less than the 38.8 Wh capacity of the larger [iPad Pro](#)—but fractionally *better* than the [iPad Air 2](#)'s 27.62 Wh. Still, all three models have roughly the same estimated battery life.
- We're about to leave the case at that, but we try another poke at the Smart connector, hoping for an easier extraction than [last time](#). No such luck.

Step 14



REPAIRABILITY SCORE:



- iPad Pro Repairability Score: **2 out of 10** (10 is easiest to repair)
 - While not soldered in place, the battery is very solidly adhered—no more pull tabs like we saw in the larger iPad Pro 12.9"
 - The Smart Connector port is virtually impossible to replace—but incorporates no moving parts and is unlikely to fail.
 - The LCD and front panel glass are fused together. This slightly simplifies the opening procedure.
 - The fused front panel increases the cost of screen repair, and the risk of damaging the LCD when opening.
 - Gobs of adhesive hold everything in place making all repairs more difficult.

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